

Appl. No. 09/976,627
Amd. Dated February 23, 2005
Reply to Office Action of November 29, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): In a data communication network wherein data is transmitted from a first node to a second node, a method for operating said first node, said method comprising:

transmitting data packets from said first node to said second node, wherein transmitting said data packets from said first node to said second node includes encapsulating said data packets such that a sequence number is appended in a header for each transmitted data packet to facilitate retransmission; and

receiving bitmap information from said second node that identifies packets to be retransmitted.

Claim 2 (original): The method of claim 1 further comprising:

retransmitting said packets identified by said bitmap information to said second node.

Claim 3 (currently amended): The method of claim 1 further comprising:

determining when space is available in a retransmission buffer;

storing said [[transmitted]] data packets in said [[a]] retransmission buffer when it is determined that space is available in said retransmission buffer;

holding said data packets in a queue when it is determined that space is not available in said retransmission buffer and space is available in said queue; and

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Appl. No. 09/976,627
And. Dated February 23, 2005
Reply to Office Action of November 29, 2004

discarding said data packets when it is determined that space is not available in said retransmission buffer and space is not available in said queue.

Claim 4 (original): The method of claim 1 wherein said data communication network comprises a point to multipoint network.

Claim 5 (original): The method of claim 4 wherein transmitting comprises: transmitting employing a DOCSIS MAC protocol.

Claim 6 (canceled)

Claim 7 (currently amended): In a data communication network wherein data is transmitted from a first node to a second node, a method for operating said second node, said method comprising:

receiving data packets from said first node, wherein receiving said data packets from said first node includes removing headers appended to the data packets;

forming bitmap information to identify data packets for which retransmission will be requested; and

transmitting said bitmap information to said first node to request retransmission.

Claim 8 (original): The method of claim 7 wherein said received data packets are identified by a serial number.

Appl. No. 09/976,627
Amd. Dated February 23, 2005
Reply to Office Action of November 29, 2004

Claim 9 (original): The method of claim 8 further comprising:
storing said received data packets in a buffer indexed by serial number.

Claim 10 (original): The method of claim 9 wherein said bitmap information identifies gaps in a serial number sequence of said received data packets.

Claim 11 (original): The method of claim 7 wherein transmitting said bitmap information comprises transmitting said bitmap information upon expiration of an acknowledgment timer.

Claim 12 (currently amended): In a data communication network wherein data is transmitted from a first node to a second node, apparatus for operating said first node, said apparatus comprising:

means for transmitting data packets from said first node to said second node, wherein said means for transmitting said data packets from said first node to said second node include means for encapsulating said data packets such that a sequence number is appended in a header for each transmitted data packet to facilitate retransmission; and

means for receiving bitmap information from said second node that identifies packets to be retransmitted.

Claim 13 (original): The apparatus of claim 12 further comprising:
means for retransmitting said packets identified by said bitmap information to said second node.

Appl. No. 09/976,627
Amd. Dated February 23, 2005
Reply to Office Action of November 29, 2004

Claim 14 (currently amended): The apparatus of claim 12 further comprising:
means for determining when space is available in a retransmission buffer;
means for storing said [[transmitted]] data packets in said [[a]] retransmission buffer
when it is determined that space is available in said retransmission buffer;
means for holding said data packets in a queue when it is determined that space is not
available in said retransmission buffer and space is available in said queue; and
means for discarding said data packets when it is determined that space is not available in
said retransmission buffer and space is not available in said queue.

Claim 15 (original): The apparatus of claim 12 wherein said data communication network comprises a point to multipoint network.

Claim 16 (original): The apparatus of claim 15 wherein said means for transmitting comprises:

means for transmitting employing a DOCSIS MAC protocol.

Claim 17 (canceled)

Claim 18 (currently amended): In a data communication network wherein data is transmitted from a first node to a second node, apparatus for operating said second node, said apparatus comprising:

Appl. No. 09/976,627
Am. Dated February 23, 2005
Reply to Office Action of November 29, 2004

means for receiving data packets from said first node, wherein said means for receiving data packets from said first node include means for removing headers appended to the data packets;

means for forming a bitmap to identify data packets for which retransmission will be requested; and

means for transmitting said bitmap to said first node to request retransmission.

Claim 19 (original): The apparatus of claim 18 wherein said received data packets are identified by a serial number.

Claim 20 (original): The apparatus of claim 19 further comprising:

means for storing said received data packets in a buffer indexed by serial number.

Claim 21 (original): The apparatus of claim 20 wherein said bitmap identifies gaps in a serial number sequence of said received data packets.

Claim 22 (original): The apparatus of claim 18 wherein said means for transmitting said bitmap comprises means for transmitting said bitmap upon expiration of an acknowledgment timer.

Claim 23 (currently amended): In a data communication network wherein data is transmitted from a first node to a second node, a computer program product for operating said first node, said apparatus comprising:

Appl. No. 09/976,627

Amd. Dated February 23, 2005

Reply to Office Action of November 29, 2004

code that transmits data packets from said first node to said second node, said code that transmits data packets from said first node to said second node including code that encapsulates said data packet such that a sequence number is appended in a header for each transmitted data packet to facilitate retransmission;

code that receives bitmap information from said second node that identifies packets to be retransmitted; and

a computer-readable storage medium that stores the codes.

Claim 24 (original): The computer program product of claim 23 further comprising:
code that retransmits said packets identified by said bitmap information to said second node.

Claim 25 (currently amended): The computer program product of claim 23 further comprising:

code that determines when space is available in a retransmission buffer;
code that stores said [[transmitted]] data packets in said [[a]] retransmission buffer when it is determined that space is available in said retransmission buffer;
code that holds said data packets in a queue when it is determined that space is not available in said retransmission buffer and space is available in said queue; and
code that discards said data packets when it is determined that space is not available in said retransmission buffer and space is not available in said queue.

Appl. No. 09/976,627
Am. Dated February 23, 2005
Reply to Office Action of November 29, 2004

Claim 26 (original): The computer program product of claim 23 wherein said data communication network comprises a point to multipoint network.

Claim 27 (original): The computer program product of claim 26 wherein said code that transmits comprises:

code that transmits employing a DOCSIS MAC protocol.

Claim 28 (canceled)

Claim 29 (currently amended): In a data communication network wherein data is transmitted from a first node to a second node, a computer program product for operating said second node, said computer program product comprising:

code that receives data packets from said first node, wherein said code that receives data packets from said first node includes code that removes headers appended to the data packets;

code that forms bitmap information to identify data packets for which retransmission will be requested;

code that transmits said bitmap information to said first node to request retransmission; and

a computer-readable storage medium that stores the codes.

Claim 30 (original): The computer-readable storage medium of claim 29 wherein said received data packets are identified by a serial number.

Appl. No. 09/976,627
Am. Dated February 23, 2005
Reply to Office Action of November 29, 2004

Claim 31 (original): The computer-readable storage medium of claim 30 further comprising:

code that stores said received data packets in a buffer indexed by serial number.

Claim 32 (original): The computer program product of claim 31 wherein said bitmap information identifies gaps in a serial number sequence of said received data packets.

Claim 33 (original): The computer program product of claim 29 wherein said code that transmits said bitmap information comprises code that transmits said bitmap information upon expiration of an acknowledgment timer.

Claim 34 (new): The method of claim 2 wherein retransmitting said packets identified by said bitmap information to said second node includes retransmitting said packets until a retry limit is approximately reached.

Claim 35 (new): The apparatus of claim 13 wherein said means for retransmitting said packets identified by said bitmap information to said second node include means for retransmitting said packets until a retry limit is approximately reached.

Claim 36 (new): The computer program product of claim 23 wherein said code that retransmits said packets identified by said bitmap information to said second node includes code that retransmits said packets until a retry limit is approximately reached.

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